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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/995,056
Filing Date: November 26, 2001
Appellant(s): CRUICKSHANK ET AL.

Charles A. Mirho
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 8/12/2008 appealing from the Office action mailed 5/26/2006.

(1) Real Party in Interest

A statement identifying by name the real Party in Interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

A). Foulger et al. U.S. Patent Publication # 2003/0018769

B). Feinberg et al. U.S. Patent # 6,798,745

C). Vogel al. U.S. Patent # 6,742,187

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-3,5-7,15-20,22,33-35,37-39,47-52,54 are rejected under 35 U.S.C. 102(e) as being unpatentable by Foulger et al. U.S. Patent Publication # 2003/0018769 (hereinafter Foulger).

Claims 9-14,41-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foulger et al. U.S. Patent Publication # 2003/0018769 (hereinafter Foulger) in view of Feinberg et al. U.S. Patent # 6,798,745 (hereinafter Feinberg).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

1. Claims 1-3,5-7,15-20,22,33-35,37-39,47-52,54 are rejected under 35

U.S.C. 102(e) as being unpatentable by Foulger et al. U.S. Patent Publication # 2003/0018769 (hereinafter Foulger).

As per claim 1, Foulger teaches a computer program product comprising computer-executable instructions for causing a computer to:

-obtain performance data related to performance of a broadband network (Paragraph 22)(Paragraph 40) and

-provide hierarchical display of network performance (Fig. 3 element "network summary") the hierarchical display including a first level with first data indicative of network operation (Fig. 3 element "network summary")(Paragraph 62)(Paragraph 63) and a second level with second data indicative of a plurality of issues (Fig. 3 element 120 "route performance") comprising the first level of network performance (Paragraph 65);

-wherein the second level includes multiple issues that contain a third level with third data indicative of network issues (Fig. 3 element "Link performance") comprising at least some of the secondary level issues (Paragraph 65)(Paragraph 66)

-provide at least one of an indication of a likely network problem and a suggested action for addressing the likely network problem (Paragraph 97)(Paragraph 98).

The reference teaches having loss of client connection (indication of likely network problem) and storing the traffic data from last ten minutes and continuously refreshed (suggested action for addressing the network problem).

As per claim 2, Foulger teaches the computer program product of claim 1, wherein the first data are indicative of overall performance of one of the network, and a

selected portion of the network (Fig. 3 element "network summary")(Paragraph 62)(Paragraph 63).

As per claim 3, Foulger teaches the computer program product of claim 2 wherein the first data are indicative of overall performance of the network and the issues at the second level include at least one of connectivity and traffic (Paragraph 65).

As per claim 5, Foulger teaches the computer program product of claim 1, further comprising instructions for causing the computer to provide at least one of location of network elements associated with the selected level (column 27 lines 6-31) and metrics corresponding to the network elements and associated with at least one issue comprising the selected level (Paragraph 68)(Fig. 9)(Fig. 11)

As per claim 6, Foulger teaches the computer program product of claim 5, further comprising instructions for causing the computer to provide a selected portion of the at least one of locations location of network elements associated with the selected level, and metrics corresponding to the network elements and associated with at least one issue comprising the selected level, provided of issues comprising a selected level (Paragraph 68) (Fig. 9)(Fig. 11).

As per claim 7, Foulger teaches the computer program product of claim 5, further comprising instructions for causing the computer to sort at least one of locations location of network elements associated with the selected level, and metrics corresponding to the network elements and associated with at least one issue comprising the selected level according to at least one selected criterion (Paragraph 78) (Fig. 9)(Fig. 11).

As per claim 15, Foulger teaches the computer program product of claim 1, wherein the hierarchical display is independent of an amount of network elements contributing to the indicia of network performance (Fig. 3,4,5)(Paragraph 62).

The reference teaches hierarchical display in figures 3, 4,5, and the display is independent of an amount of network contributing to indicia of network performance as seen in table of fig. 5 where there are number of network elements in different location.

As per claim 16, Foulger teaches the computer program product of claim 15, wherein the second data are indicative of network issues perceived to affect network performance more than network issues absent from the display (Fig. 5)(Paragraph 66)(Paragraph 68).

As per claim 17, Foulger teaches the computer program product of claim 1 wherein the displayed data associated with levels provide indicia of absolute performance of portions of the network associated with the respective levels (Fig. 5 element “(Paragraph 71).

As per claim 18, Foulger teaches the computer program product of claim 1 wherein the displayed data associated with levels provide indicia of relative performance of portions of the network associated with the respective levels (Fig. 5 element “average latency”)(Paragraph 71).

As per claim 19, Foulger teaches the computer program product of claim 18 wherein the displayed data associated with levels provide indicia of absolute performance of portions of the network associated with the respective levels (Fig. 5 element “average latency”)(Paragraph 71).

As per claim 20, Foulger teaches the computer program product of claim 19, further comprising instructions for providing a display of the data associated with levels over time (Fig. 7,8,10).

The figure shows graph of site weather (first level), latency (second level), volume (third level) over time.

As per claim 22, Foulger teaches the computer program product of claim 1 wherein the first and second data provide indicia of grades of degradation of performance of at least portions of the network as a function of time (Paragraph 68)(Fig. 7,8,10).

As per claims 33-35,37-39 respectively, teaches same limitations as claims 1-3, 5-7 respectively, therefore rejected under same basis.

As per claims 47-52,54 respectively, teaches same limitations as claims 15-20,22 respectively, therefore rejected under same basis.

2. Claims 9-14,41-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foulger et al. U.S. Patent Publication # 2003/0018769 (hereinafter Foulger) in view of Feinberg et al. U.S. Patent # 6,798,745 (hereinafter Feinberg).

As per claim 9, Foulger teaches the computer program product of claim 1 but fails to teach wherein the collected data are metrics of network performance derived from raw data indicative of network activity. Feinberg teaches the collected data are metrics of network performance derived from raw data indicative of network activity (column 5 lines 30-45).

Feinberg teaches collected data are of QoS events (metric) of the network performance indicating types of packet loss, packets received out of sequence etc. which are derived from shaping the raw data.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to implement Feinberg's teaching in Foulger's teaching to come up with collected data are metric of network performance derived from the raw data. The motivation for doing so would have been to find out how the network is performing indicating packets loss, jitter, excessive network delay and how much information transfer rate is.

As per claim 10, Foulger and Feinberg teaches the computer program product of claim 9 but Foulger fails to teach further comprising instructions for causing the computer to derive the metrics from the raw data. Feinberg teaches instructions for causing the computer to derive the metrics from the raw data (column 5 lines 40-45) It would have been obvious to one of ordinary skill in the at the time of applicant's invention to implement Feinberg's teaching in Foulger's teaching to come up with deriving the metric from the raw data. The motivation for doing so would have been to find out how the network is performing indicating packets loss, jitter, excessive network delay and how much information transfer rate is.

As per claim 11, Foulger teaches a computer program product comprising computer-executable instructions for causing a computer to:

-obtain performance data related to performance of a broadband network (Paragraph 22)(Paragraph 40) and

-provide hierarchical display of network performance (Fig. 3 element “network summary”) the hierarchical display including a first level with first data indicative of network operation (Fig. 3 element “network summary”)(Paragraph 62)(Paragraph 63) and a second level with second data indicative of a plurality of issues (Fig. 3 element 120 “route performance”) comprising the first level of network performance (Paragraph 65);

-wherein the second level includes multiple issues that contain a third level with third data indicative of network issues (Fig. 3 element “Link performance”) comprising at least some of the secondary level issues (Paragraph 65)(Paragraph 66).

Foulger fails to teach obtain first metrics of performance of at least a portion of the network and combine a plurality of first metrics into a second metric of network performance indicative of a higher-level of network performance than indicated by the first metrics.

Feinberg teaches the instructions for causing the computer to derive the metrics include instructions for causing the computer to:

-obtain first metrics of performance of at least a portion of the network (column 5 lines 31-45); and

Feinberg teaches obtaining QoS parameter data or also known as QoS events (first metrics).

combine a plurality of first metrics into a second metric of network performance indicative of a higher-level of network performance than indicated by the first metrics (column 5 lines 31-60)

Feinberg teaches combining QoS events into QoS parameter value (second metric of network performance of higher-level network performance) to indicate which QoS events have been lost.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to implement Feinberg's teaching in Foulger's teaching to come up with obtain first metric of performance and combine first metrics into second metrics indicative of higher-level of network performance in the broadband network. The motivation for doing so would have been to find out metric of the network performance and this information can be used to find out and to compare the network metric with other part of the network and find out which part of the network is not performing well and which may be bringing the network performance down.

As per claim 12, Foulger and Feinberg teaches the computer program product of claim 11 but Feinberg further teaches wherein the instructions for causing the computer to combine first metrics weight different metrics differently dependent upon perceived relevance of an issue associated with the metric to network performance (column 5 lines 40-49)

As per claim 13, Foulger teaches a computer program product comprising computer-executable instructions for causing a computer to:

-obtain performance data related to performance of a broadband network (Paragraph 22)(Paragraph 40) and

-provide hierarchical display of network performance (Fig. 3 element "network summary") the hierarchical display including a first level with first data indicative of

network operation (Fig. 3 element "network summary")(Paragraph 62)(Paragraph 63) and a second level with second data indicative of a plurality of issues (Fig. 3 element 120 "route performance") comprising the first level of network performance (Paragraph 65);

-wherein the second level includes multiple issues that contain a third level with third data indicative of network issues (Fig. 3 element "Link performance") comprising at least some of the secondary level issues (Paragraph 65)(Paragraph 66).

Foulger fails to teach the instructions for causing the computer to derive the metrics include instructions for causing the computer to perform comparisons of first metrics derived from the raw data with thresholds and to provide second metrics based upon the comparisons.

Feinberg further teaches wherein the instructions for causing the computer to derive the metrics include instructions for causing the computer to perform comparisons of first metrics derived from the raw data with thresholds and to provide second metrics based upon the comparisons (column 5 lines 40-60)

The reference teaches shaping the raw data which comprises QoS events (first metric derived from raw data w/ thresholds) to obtain QoS parameter value (second metric) based on comparisons.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention was made to implement Feinberg's teaching in Foulger's teaching to come up with deriving metrics and providing second metrics from first metrics based

on the comparison. The motivation for doing so would be so that the second metrics would represent if the performance of the network has degraded over time.

As per claim 14, Foulger and Feinberg teaches the computer program product of claim 13, but Feinberg further teaches wherein the second metrics provide indicia of grades of degraded performance of portions of the network as a function of time (column 5 lines 45-49)(column 5 lines 49-64).

The reference teaches the QoS parameter value (second metric) is produced by summing the total number of lost packets (degraded performance of the network) in a one second period (as a function of time).

As per claims 41-42, they teach same limitation as claims 9-10, therefore rejected under same basis.

As per claim 43, Foulger and Feinberg teaches the method of claim 42, but Feinberg further teaches wherein of deriving the metrics comprises obtaining first metrics of performance of at least a portion of the network (column 5 lines 31-45); and

Feinberg teaches obtaining QoS parameter data or also known as QoS events (first metrics).

-combining a plurality of first metrics into a second metric of network performance indicative of a higher-level of network performance than indicated by the first metrics (column 5 lines 31-60)

Feinberg teaches combining QoS events into QoS parameter value (second metric of network performance of higher-level network performance) to indicate which QoS events have been lost.

As per claim 44, Foulger teaches a method comprising:

-obtaining performance data related to performance of a broadband network (Paragraph 22)(Paragraph 40) and

-providing hierarchical display of network performance (Fig. 3 element "network summary") the hierarchical display including a first level with first data indicative of network operation (Fig. 3 element "network summary")(Paragraph 62)(Paragraph 63) and a second level with second data indicative of a plurality of issues (Fig. 3 element 120 "route performance") comprising the first level of network performance (Paragraph 65);

-wherein the second level includes multiple issues that contain a third level with third data indicative of network issues (Fig. 3 element "Link performance") comprising at least some of the secondary level issues (Paragraph 65)(Paragraph 66).

Foulger fails to teach obtaining first metrics of performance of at least a portion of the network and combining a plurality of first metrics into a second metric of network performance indicative of a higher-level of network performance than indicated by the first metrics and wherein said step of combining the first metrics comprises weighting different metrics differently depending upon perceived relevance of an issue associated with the metric to network performance.

Feinberg further teaches wherein of deriving the metrics comprises obtaining first metrics of performance of at least a portion of the network (column 5 lines 31-45); and

Feinberg teaches obtaining QoS parameter data or also known as QoS events (first metrics).

-combining a plurality of first metrics into a second metric of network performance indicative of a higher-level of network performance than indicated by the first metrics (column 5 lines 31-60)

Feinberg teaches combining QoS events into QoS parameter value (second metric of network performance of higher-level network performance) to indicate which QoS events have been lost.

-combining first metrics weight different metrics differently dependent upon perceived relevance of an issue associated with the metric to network performance (column 5 lines 40-49).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to implement Feinberg's teaching in Foulger's teaching to come up with obtain first metric of performance and combine first metrics into second metrics indicative of higher-level of network performance in the broadband network and weighting different metrics differently depending upon perceived relevance. The motivation for doing so would have been to find out metric of the network performance and this information can be used to find out and to compare the network metric with other part of the network and find out which part of the network is not performing well and which may be bringing the network performance down.

As per claims 45-46, they teach same limitation as claims 13-14, therefore rejected under same basis.

Allowable Subject Matter

Claims 23, 55, 67-85 are allowed.

Claims 23,55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: "the network is a DOCSIS network including cable modems and cable modem termination systems, and the first and second data indicate numbers of cable-modem hours at the grades of degradation".

(10). Response to Arguments

Applicant's argument:

Applicant states Foulger fails to suggest or teach "analyzing the locations of network elements or metrics associated with the network elements to provide an indication of a likely network problem, and a suggested action for addressing the likely network problem".

Examiner's response:

Examiner respectfully disagrees with the applicant, because first nowhere in the claim language does it states "analyzing **the location of network elements**" because in Paragraph 97, Foulger teaches having loss of client connection (indication of likely network problem) even though the data has not been lost and storing the traffic data from last ten minutes and continuously refreshed after the loss of client connection (suggested action for addressing the network problem). Therefore, Foulger does teach

indicating a likely network problem and suggesting action for addressing the likely network problem (Paragraph 97)(Paragraph 98).

Applicant's argument:

Appellant respectfully disagrees and submits that the combination of Foulger and Feinberg fails to teach "combine first metrics by weighting different metrics differently dependent upon perceived relevance of an issue associated with the metric to network performance".

Examiner's response:

Examiner respectfully disagrees with the applicant because in column 5 lines 40-60, Feinberg teaches the number of combination and permutations for processing or shaping the data (specific processing of weighting different metrics) which comprises QOS events to obtain parameter value and the QoS event is a packet loss, QoS parameter value is produced by summing the total number of packet lost in one second period (differently dependent upon perceived relevance of an issue). Examiner would like to point the claim language states weighting different metrics differently dependent upon perceived relevance, which means the metrics can be viewed differently based on perceived relevance of an issue . Therefore Feinberg states for processing or shaping the data (specific processing of weighting different metrics) which comprises QOS events to obtain parameter value and the QoS event is a packet loss, QoS parameter value is produced by summing the total number of packet lost in one second period (differently dependent upon perceived relevance of an issue). Therefore Feinberg teaches the claimed limitations.

Applicant's argument:

Appellant respectfully disagrees and submits that the combination of Foulger and Feinberg fails to teach "comparisons of first metrics derived from the raw data with thresholds and to provide second metrics based upon the comparisons".

Examiner's response:

Examiner respectfully disagrees with the applicant because in column 5 lines 40-60, Feinberg teaches shaping the raw data which comprises QoS events (first metric derived from raw data w/ thresholds) to obtain QoS parameter value (second metric) based on comparisons. Feinberg teaches the QoS events (first metric) is derived from monitoring QoS performance parameter data which is raw data that is stored as QoS events and then the QoS events are processed to obtain QoS parameter value (second metric) based on comparison. The comparison is done in column 5 lines 45-60, where QoS is packet loss, and QoS parameter value is produced by summing the total of packet loss in one second period. The QoS parameter value is then compared with the QoS acceptance value. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention was made to implement Feinberg's teaching in Foulger's teaching to come up with deriving metrics and providing second metrics from first metrics based on the comparison. The motivation for doing so would be so that the second metrics would represent if the performance of the network has degraded over time.

Applicant's argument:

Appellant respectfully disagrees and submits that the combination of Foulger and Feinberg fails to teach "the second metrics provide indicia of grades of degraded performance of portions as a function of time".

Examiner's response:

Examiner respectfully disagrees with the applicant because in column 5 lines 45-67, column 6 lines 37-56, Feinberg teaches QoS parameter value (second metric) is produced by summing the total number of lost packets (degraded performance of the network) in a one second period (as a function of time). Feinberg also teaches detected packet loss as function of time "L(T)" and it states as L(T) becomes increasingly greater in value QoS begins to degrade at the gateway terminates call connections (degraded performance or portions of network). Feinberg further teaches that number of terminations of call connections is determined according with severity of packet loss over time "L(T)". Therefore, Feinberg does teach claimed limitations providing indicia of grades of degraded performance or portions of the network as a function of time.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Dhairya A. Patel
Examiner
Art Unit 2151
September 5, 2008
/John Follansbee/

Supervisory Patent Examiner, Art Unit 2151

Conferees:

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